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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/486,908	05/11/2000	STEFAN PFAB	P00.0365	9541

7590   04/04/2003

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EXAMINER
ANDERSON, MATTHEW D

ART UNIT	PAPER NUMBER
2186	

DATE MAILED: 04/04/2003

/3

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 March 2003</u> .

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-15</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-7 and 9-14</u> is/are rejected.

7)☒ Claim(s) <u>8 and 15</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>11 May 2000</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6</u> .

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: .

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers

have been placed of record in the file.

Response to Amendment

2.   In response to the amendment filed 3/26/03:

        claims 6-8 have been amended, and the corresponding objections and USC 112 rejections

have been withdrawn;

        the title has been amended, and the corresponding objection has been withdrawn.

Allowable Subject Matter

3.   Claims 8 and 15 are objected to as being dependent upon a rejected base claim, but would

be allowable if rewritten in independent form including all of the limitations of the base claim

and any intervening claims.

4.   The following is a statement of reasons for the indication of allowable subject matter: the

prior art doe not teach or suggest the second output start address being related to, but different

from, the first output start address by a scope defined by a wiring of the multiplexer.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United
> States before the invention thereof by the applicant for patent, or on an international application by another who
> has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention
> thereof by the applicant for patent.

6.   Claims 1-7 and 9-14 are rejected under 35 U.S.C. 102(e) as being anticipated by

Pawlowski (US Patent # 5,787,475).

7.   With respect to claims 1 and 9, Pawlowski discloses a data storage device (main

memory) (see column 4, lines 5-15) comprising:

memory cells having stored data with selectable output addresses (see column 4, lines 34-

45, 54-60, and figure 1, item 14), wherein the specific starting address provided by a request of

data is used to determine which cache line or consecutive cache lines in memory contain a

beginning portion of the requested data and outputs the requested data with cache lines, which

are considered to be the selected output start address;

wherein the storage device (main memory) responds to a data output request (peripheral

device) by outputting the stored data beginning with a selected output start address (see column

4, lines 34-45 and column 5, line 66 to column 6, lines 10; and column 6, lines 19-35 and 50-59),

wherein the specific starting address provided by the request of data is used to determine which

cache line or consecutive cache lines in memory contain a beginning portion of the request data,

and outputting the requested data with cache lines or consecutive cache lines, which are

considered to be the selected output start address;

wherein selectable output start addresses are spaced from one another such that an

amount of data that can be stored between neighboring output start addresses is smaller than an

amount of data in response to the data output request (see column 6 lines 30-35; column 7, lines

15-25; column 9 line 56 to column 10, line 15; column 11, lines 45-58, and column 11, line 64 to

column 12, line 8). Data retrieved by the I/O controller to determine which cache line of data

contains the beginning portion of address requested by the peripheral from the memory. If this

beginning portion of the address is in the first cache line, then the data output to requested data

by the first cache line. However, if the retriever determines that a next consecutive cache line

contains the beginning portion of the requested data, the retriever increments the starting address

and uses the incremented starting address to request the consecutive cache lines of data from

memory. In all situations, a first cache line of consecutive cache lines, the data stored in the

neighboring starting address is less than the output address since if the portion of the starting

address provided by the requested data is in the first cache line, the output transfers to requested

data by first cache line; and if it is greater than the first cache line, the output transfers by two

consecutive cache lines.

8.   With respect to claims 2 and 10, Pawlowski discloses a the selected output start address

(beginning portion of started address for outputting the data requested by a cache line) is

determined utilizing address data (peripheral device) applied to the data storage device (main

memory) (see column 4, lines 34-45 and column 5, line 66 to column 6, line 10).

9.   With respect to claims 3 and 11, Pawlowski discloses:

the selected output start address is determined by further utilizing adaptation data (data

retriever) applied to the data storage (main memory) (see column 9, lines 22-42; and column 9,

line 64 to column 10 line 15);

the adaptation data (data retriever) is related both to the output start address to be

employed and an address that is defined by the address data (peripheral device) (see column 6,

lines 30-35).

10.   With respect to claims 4 and 12, Pawlowski discloses:

output terminals (main memory output terminals) (see figure 1, items 14 and 26);

an interface (I/O module) provided between memory cell of the data storage device (main

memory) and the output terminals (see figure 1, items 14, 18, 24, 26, and figure 2, items 16, 42,

44, and column 6, lines 19-25).

11.   With respect to claim 6, Pawlowski discloses using a prefetch system wherein the first

cache line and second cache connected as a consecutive cache line for transferring the data to a

requested data (peripheral device), and based on the beginning portion of the address provided

by the requested data, if the starting address is greater than the first cache line, a consecutive line

will be retrieved (see column 4, lines 54-60; column 5, line 66 to column 6, line 19, and column

7, lines 15-25). In other words, data stored with an output start address selected from the group

consisting of a first output start address and a second output start address are through-connected.

12.   With respect to claims 7 and 14, Pawlowski discloses the first output start address

(beginning portion of the address provided by peripheral device for cache line output from the

main memory) is an address that is represented by the address data (peripheral device) applied to

the data storage device (main memory) (see column 5, line 59 to column 6, line 10).

13.   With respect to claims 5 and 13, Pawlowski discloses a multiplexer that is driven based

on the adaptation data, by showing in figure 2, data buffered from the data retriever is input into

an I/O interface 44.

Response to Arguments

14.   With respect to independent claims 1 and 9, the Applicant alleges that Pawlowski does

not teach outputting an amount of data larger than the amount between neighboring output start

addresses. The Examiner believes that Pawlowski still reads upon the claim language because it

still outputs/transfers the prefetched cache line response to the first request. The desired data is

repeatedly referred by Pawlowski as "the requested data" even though it may require a prefetch

transfer. As recited in column 2, lines 30-35, a peripheral may request less than a cache line of

data in one transaction and greater than a multiple number of cache lines of data in another

transaction.

15.   Because of the reasons given above, the rejections to claims 1-7 and 9-14 are maintained.

Conclusion

16.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this
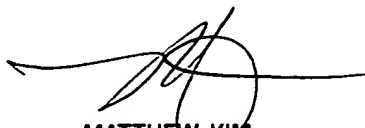
final action.

17.   The prior art made of record on form PTO-892 and not relied upon is considered

pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider

these references fully when responding to this action. The documents cited therein teach similar

data access systems.

18.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Matthew D. Anderson whose telephone number is (703) 306-

5931. The examiner can normally be reached on Monday-Friday, 2nd Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matthew Kim can be reached on (703) 305-3821. The fax phone numbers for the

organization where this application or proceeding is assigned are (703) 746-7239 for regular

communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

Matthew D. Anderson
April 3, 2003

MATTHEW KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100